

Before The
FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of)	
)	
High-Cost Universal Service Support)	WC Docket No. 05-337
)	
Federal-State Joint Board on Universal Service)	CC Docket No. 96-45
)	
Lifeline and Link Up)	WC Docket No. 03-109
)	
Universal Service Contribution Methodology)	WC Docket No. 06-122
)	
Numbering Resource Optimization)	CC Docket No. 99-200
)	
Implementation of the Local Competition)	
Provisions in the Telecommunications Act of 1996)	CC Docket No. 96-98
)	
Developing a Unified Intercarrier Compensation)	
Regime)	CC Docket No. 01-92
)	
Intercarrier Compensation for ISP-Bound Traffic)	CC Docket No. 99-68
)	
IP-Enabled Services)	WC Docket No. 04-36

To: The Federal-State Joint Board on Universal Service

COMMENTS OF
CostQuest Associates

CostQuest Associates ("CostQuest"), a world leader in economic network cost modeling and analysis and design of universal service funding systems, submits these comments in response to the FCC's public notice seeking comment on *long-term reform for High-Cost Universal Service Support* and for *Developing a Unified Intercarrier Compensation Regime*. CostQuest is a consulting organization that serves, in an unbiased manner, all modes of technology and carrier class. We have performed work for rural service providers, RBOC's, cable providers, mobile wireless carries, regulators and governments. Because of the breadth and depth of our

experience, we believe we are uniquely positioned to comment on some aspects of the FNPRM. While it's tempting for us to comment on many issues and details that remain unresolved in the High-Cost USF and Intercarrier Compensation matters, we will stick to what we know best: economic costs of constructing facilities to serve, and serving, customers.

We organize our brief comments into four sections. First the objectives and guiding principles for reform must be clear. Second, based upon prior analyses we illustrate some of the anomalies of the current Universal Service funding scheme. We also illustrate some of the potential problems which may be introduced by acceptance of the proposal alternatives in the FNPRM. Third, we draw upon prior experience to propose methods which should be useful to support the Commission's USF reform agenda. And forth, we highlight some issues in the intercarrier compensation suggested reform and propose an approach to help focus the reform effort.

What is Reform?

On Nov. 5, the FCC issued their FNPRM on USF and Interconnection reform.¹ Our comments that follow will focus primarily on the 'reforms' suggested in Appendix A. While many parties have called for major reform and while the FCC labels their proposals as comprehensive reform, we believe the proposals fall short of major long term reform. The first step is to be clear on the objectives of reform and the fundamental principles to be considered when attempting to meet the objectives. Moreover, without a clear linkage from policy objective to practice changes, we risk only adding issues to a system of a funding and distribution which many point out is already fraught with problems.

The changes in the FNPRM in regard to USF seem focused on the total funding level and CETC qualification, not how the funding is prioritized, developed and distributed. **We believe that a reformed system should be competitively neutral (both with reference to technology and provider type) and open to public scrutiny of fundamental assumptions, data and calculations. The reformed system must also support the objectives of the 1996 Telecommunications Act. Our concern is that too little in the FNPRM is focused on these measures.** In regard to intercarrier compensation, we are not sure if the reform answers or raises more questions.

¹ FCC 08-262, Order on Remand and Report and Order and Further Notice of Proposed Rulemaking, rel. Nov. 5, 2008,

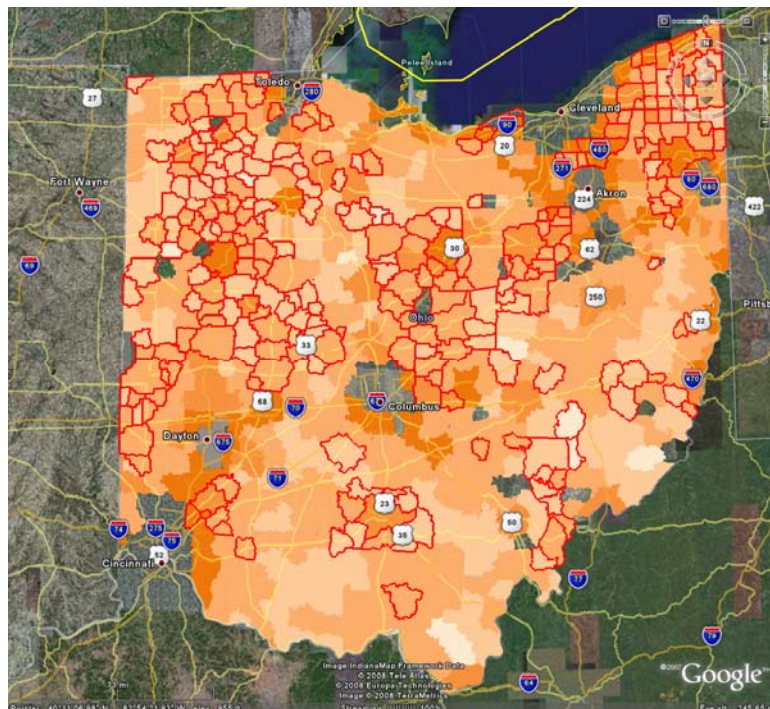
What are the major problems with our current High-Cost USF system and the Suggested Comprehensive reform in the FNPRM?

High-Cost Distribution

Before we summarize the issues, the following illustrates, via Google Earth maps, how the current high cost system functions within Ohio

In **Figure 1**, “Rural” company areas are encased in red as determined by the FCC. This Rural qualification is then overlaid with the estimated density by exchange. A lighter color indicates lower population density, darker color indicates higher population density, and no color indicates very high density in that exchange). It is apparent from this picture that the FCC’s “Rural” indication has little to do with identifying low density areas Ohio.

Figure 1 – “Rural” areas and density



In **Figure 2**, Ohio has been rotated to provide a better view of funded areas. On this map, we have highlighted, in blue, areas with significant per-line USF funding (with IAS and ICLS, most areas receive nominal funding per line). In the image, the height of the polygon indicates the level of per line funding. From this, we see that funding is focused in a few areas of the state, but not directly linked to population density.

From **Figure 2**, funding does not seem to line up closely with where one might expect funding: areas of low population density within the state. But low density is only an indication of potential high costs; the more important question is...how does the funding line up with the estimated cost of service within the state? **Figure 3** shows the cost per line per wire center within Ohio based on the latest run of our forward-looking CostPro model based upon US Census housing unit data and recent prices for labor and material. In the figure, we have highlighted, in pink, those higher cost areas of the state.

In comparing Figure 2 and Figure 3 one can see that, while the funding hits some of these higher cost areas (most notably Northwest Ohio), there is no indication as to how the funding is linked to the cost per wire center. In fact, there is minimal funding in the highest cost areas of state, Southeast Ohio.

Figure 2 – USF Funding level by wire center

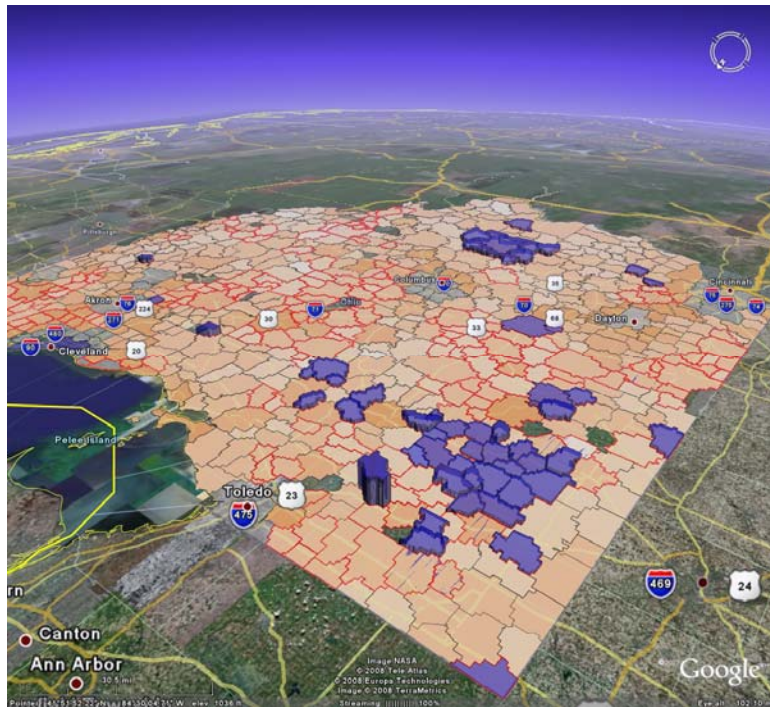
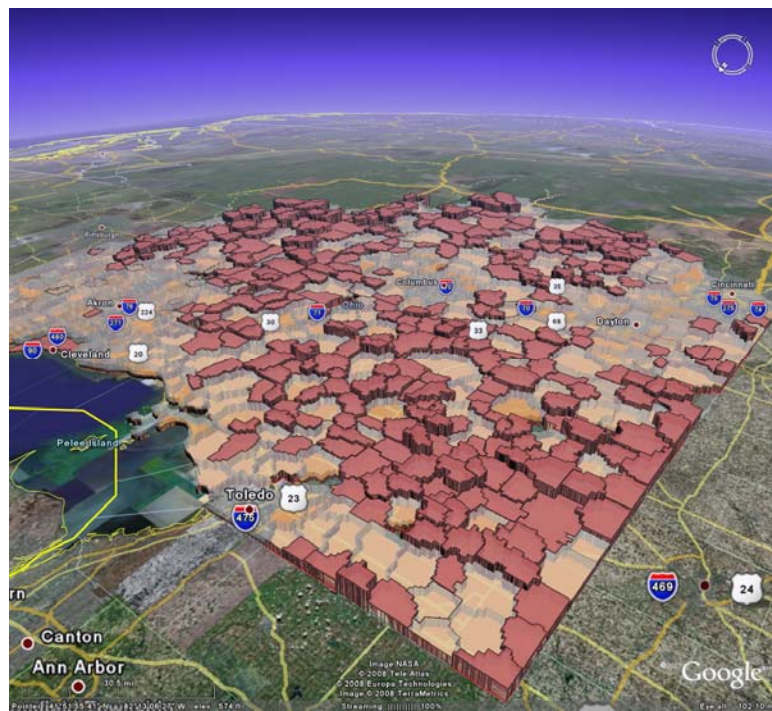


Figure 3 – Cost Per Line by Wire center



With the Ohio images in mind, the following listing summarizes a number of key issues and inconsistencies with the current USF system, some of which are apparent in the images and others which have been noted within analysis by CostQuest and various parties.

- Using different methods of measuring costs is not helpful in trying to develop uniform policy results such as the uniform treatment of high cost areas of the country. The use of **embedded costs** for Rural carriers and company-specific study area averaging to determine qualification *versus* **forward-looking costs** and statewide averaging of all non-Rural carriers does little to provide any comparability across providers and leads to an inequitable distribution of support across the States and within States as seen in Ohio. The approach also hinders that ability of policy makers to understand efficiencies or in-efficiencies of funding in geographically comparable areas of the country.
- Change in the line size of a business impacts incumbent ETCs differently than competitive ETCs. In the case of the incumbent, funding is static and reasonably insulated from line loss, while competitor funding is capped although the size of the business may be expanding.
- As seen in Ohio, the fundamental classification of rural versus non-rural is based upon the owner of the supported facilities. This leads to support distribution based on and favoring company ownership not a neutral descriptor such as population, density or US Census classification.
- There is continued reliance on implicit funding from high density areas to low density areas within a study area, which some commenters have referred to as the donut/hole issue. This typically limits or eliminates funding for any company that serves some high density areas within a designated service area (or even a wire center). This is apparent in the Ohio example in that most of the funded service areas are companies that have a single or only a few exchanges.
 - Funding for CETCs is non-uniform across the US. In fact, in our Ohio example, there is no funding for CETCs within Ohio
 - Non-rural funding is based on a model, input data and results that are over 10 years old and which does not model a broadband capable network, but broadband enabled networks seem to be an important objective within the FNPRM.
 - There is asymmetric treatment of CETCs and ETCs.

CostQuest would point out that a sound universal service program must also be competitively neutral. Attached as Addendum 1 is a paper presented by Dr. Steve Parsons at a regulatory economics conference in June 2008 that describes some of the ways in which past USF policy (and the Commission's decisions released January 29, and May 1 of this year) is (are) not competitively neutral and have favored land-line vis-à-vis mobile technologies.²

In addition to the issues that exist now, the FNPRM adds additional requirements on CETCs that may compound the fragilities of the current funding and disbursement system. For example, under the suggested comprehensive reform:

- CETCs would be funded from a bifurcation of the USF system between ETCs and CETCs, or primarily between wireless and wireline providers, in which the system set up for the CETCs is based wholly on the ETC system and whose funding is based only on what was received as of particular date, not on what should be received to achieve the goals of the 1996 Telecommunications Act or the unique characteristic of the enabling technology.
- CETCs would be required to provide cost per line values. However, the total cost of the CETC is not defined nor is there a recommendation that forward-looking values be used.

While CostQuest has experience developing costs for carriers using *both* forward-looking economic cost modeling *and* booked costs, a truly efficient method of determining support can only be accomplished using modeled, forward-looking costs. If the FCC is committed to developing prospective policy that serves to bring advanced services to unserved and underserved communities, it should be careful to view the economics of a network in such a way as to reward economic efficiency, enable competitive fairness and support the deployment of advanced networks.

CostQuest does not agree with alternatives that call for CETC's (or for that fact, any carriers) to submit costs strictly based on the embedded books. This approach can lead to less efficient deployment of networks and the funding thereof and certainly is not in line with FCC language and rulings on the most appropriate cost to use.

- CETCs would be required to provide cost per line values. However, the divisor of the total cost is defined as the lines of the ILEC in the service area. A mathematical concept

² Steve G. Parsons, "Broadband and Mobility: The New Paradigm for Universal Service in the U.S.?" Currently unpublished manuscript, presented at the Advanced Workshop in Regulation and Competition, 20th Annual Western Conference, in Monterey, California, June 18-20, 2008. Sections IV and V (pages 12-19) are particularly germane.

that does not seem to make sense, and makes even less sense in areas with multiple CETCs where the funding has encouraged competition.

- CETC cost per line would be compared to the benchmark set for the ETCs. While we recognize that the FCC's goal in using current benchmarks is to maintain existing funding levels, it seems that this avoids independent mobile benchmarks and mechanisms. Putting arguments on technology neutrality aside, if there is to be separate funding for CETC carriers, should there not be a separate benchmark to establish high costs for deploying CETC services?
- CETCs would be revisiting equal support in two circumstances. First, when a CETC's cost exceeds the ETC benchmark. The CETC receives funding that was based on the ETCs support. Second, where a CETC's costs exceed a benchmark but in which the Incumbent ETC receives no funding, the CETC receives no funding.
- CETC funding remains based on the Incumbent LEC ETC service area, not the service area of the CETC or even a technologically or geographically independent area
- CETC spectrum costs are excluded on the basis that they are intangible assets that may increase in value. Spectrum can be viewed as a substitute asset for cable and wire on the landline side and is a required asset to provide service. In addition, this appears inconsistent with treatment of similar intangible asset costs that are included in USF on the ETC landline side such as: right of way fees, right to use fees, software costs, land, lease costs for land, etc..
- CETCs would be provided funding in an unlikely circumstance where a provider has no customers in an area. For example, if no CETC submits costs in a funding area, only the funds of the largest CETC are auctioned. However, the auction funds do not seem to be tied to lines, only offering service. It would make more sense to tie the funding to the percentage of lines the new winning bidder attains and open it to all the CETC funding in the auctioned area.

Given the existing issues in the system, the lack of reform against specific objectives, and the introduction of new issues on the CETC side, we recommend that the FCC turn the page on the suggested proposals.

What methods could be useful to support the Commission's USF reform agenda?

CostQuest hereby submits a proposal for the use of the **Advanced Services Model**, a new cost measurement standard for High-Cost funding. In May of 2007, CostQuest Associates and Parson's Applied Economics published a white paper titled "Proposal for a Competitive and Efficient Universal Service High-Cost Approach", authored by James Stegeman, Dr. Steve Parsons, and Mike Wilson, and filed by Alltel in response to the Joint Board's 2007 NPRM in regard to USF. In the paper, the authors covered a number of issues surrounding the construction of an efficient USF system. The core of the paper still holds true today. We have attached the paper to these comments (it has been updated slightly to remove some dates and Alltel references) as Addendum 2. In our comments that follow, we will reference and summarize some of the key findings of the paper in response to creating an effective, rational, and affordable USF system.

A summary of the key concepts is provided below:

- CostQuest proposes that the FCC adopt an **Advanced Services Model** for the funding of all High-Cost mechanisms for all ETC's and CETC's. We encourage the use of modern cost modeling for the advancement of efficient high-cost universal service funding that reflects the realities of today's broadband landline and mobile networks.
- With the **Advanced Services Model**, CostQuest has provided definitions of both a COST MODEL and a SUPPORT MODEL for the use of High-Cost funding. A **cost model** produces an estimate of the cost of providing a defined telecommunications service. A **support model** identifies the key parameters, such as total funding levels, that produce a universal service support funding system for the carrier or its customers based, in part, on the costs of service.
- CostQuest details the benefits of a properly developed forward looking economic cost³ and support models for universal service as:
 - Clarification of concepts of the least-cost provider
 - Normalization of participants

³ The use of Forward-looking cost is supported within the FNPRM as seen on Page A110, paragraph 243 "...since the adoption of the *Local Competition First Report and Order*, the Commission has consistently concluded that it believes that forward-looking costs are the most appropriate measure of cost."

- Metrics and analytics to examine issues such as targeting, reserve levels for auctions, service definitional changes, etc..
 - An avoidance of asymmetric embedded costs mechanisms
 - A less onerous process for stakeholders and policy makers
 - A clear link between defined service and costs developed
 - Superior incentives to build broadband networks
- CostQuest clearly links the policy supported to the input and design criteria for the **Advanced Services Model**.
 - CostQuest establishes a process and a timeline for developing the **Advanced Services Model** that results in timely completion of this model.

Intercarrier Compensation

We will constrain our discussion to a few comments.

First, within the FNPRM, Appendix A states: “As should be obvious, the incremental cost of call termination under the traditional economic definition should be significantly lower than that calculated under a TELRIC methodology.”⁴ However, any significant difference is not obvious or universally agreed upon. In fact, several economists have suggested that TELRIC costs that have been developed likely understate the economic costs of a viable-real world provider.⁵

⁴ Appendix A, para 251. See also, para 253.

⁵ See, e.g., Steve G. Parsons, Laffont and Tirole’s Competition in Telecommunications: A View from the U.S., INT. J. OF THE ECON. OF BUSINESS, vol. 9, no. 3, 2002 (finding that prices in real markets reflect the costs of the least efficient firm that actually survives, not the most efficient firm, and that risk and transition costs are not adequately considered); Anna Kovacs, “Status and Implication of UNE-Platform in RBOC Markets” an Industry Report by Commerce Capital Markets Nov. 12, 2001 (showing UNE-P was significantly below operating costs); Timothy Tardiff, Pricing Unbundled Network Elements and the FCC’s TELRIC Rule: Economic and Modeling Issues, REV. OF NETWORK ECONOMICS, Sept. 2002 (suggesting a variety of problems with TELRIC that likely lead to an understatement of costs); J. Alleman and E. Noam eds, THE NEW INVESTMENT THEORY OF REAL OPTIONS AND IT’S IMPLICATIONS FOR TELECOMMUNICATIONS (suggesting that TELRIC does not sufficiently value real options); Timothy Tardiff, Cost Standards for Efficient Competition, in EXPANDING COMPETITION IN REGULATED INDUSTRIES, M. Crew ed, 2000; DALE LEHMAN AND DENNIS WEISMAN, THE TELECOMMUNICATIONS ACT OF 1996: THE ‘COSTS’ OF MANAGED COMPETITION, 2000 (especially chapters 5 and 6); Jerry Hausman, Regulation by TSLRIC: Economic Effects on Investment and Innovation, in COMPETITION AND REGULATION IN TELECOMMUNICATION: EXAMINING GERMANY AND AMERICA, eds. G. Sidak, C. Engel, and G. Knieps, 2001 (finding TELRIC creates negative incentives to invest); David Mandy, TELRIC Pricing with Vintage Capital, JOURNAL OF REGULATORY ECONOMICS, 2002. See also, ALFRED KAHN, WHOM THE GODS WOULD DESTROY, OR HOW NOT TO DEREGULATE, (2001); Kahn, Alfred E., Timothy J. Tardiff, and Dennis L. Weisman (1999) The Telecommunications Act at Three Years: an Economic Evaluation of its Implementation by the Federal

Second, Appendix A appears to confuse the distinction between economic marginal costs and incremental costs.⁶ The seminal work on incremental costs and stand-alone costs was done in the telecommunications industry for testing for cross-subsidization. Revenues below incremental cost indicate that the service receives a cross-subsidy, while revenues above stand-alone cost indicate the service provides a cross-subsidy (to other services); revenues in between incremental costs and stand-alone cost are said to be subsidy free. Prices could exceed marginal costs, but be insufficient to recover any service-specific volume insensitive (fixed) costs – such prices would therefore be too low to be subsidy free.

Moreover, to the extent that the FCC employs an alternate cost standard or cost perspective that implies a higher proportion of service-specific fixed costs or shared and common costs, then the distinction between costs and prices becomes more critical. That is, the greater the degree to which prices must exceed marginal costs as well as incremental costs in order to recover volume-insensitive and shared and common costs.

Irrespective of the action taken by the FCC in regard to processes to implement a plan and the changes made to the costing standard, we recommend that the FCC undertake a detailed look at the costing approach used for interconnection costing and develop a template methodology to implement standard costs within each state. In this regard, we note the work performed by

Communications Commission, INFORMATION ECONOMICS AND POLICY, 11: 319- 365. J. Gregory Sidak & Daniel F. Spulber, The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996, 97 COLUM. L. REV. 1081 (1997); Jerry A. Hausman, Regulated Costs and Prices in Telecommunications, in EMERGING TELECOMMUNICATIONS NETWORKS: THE INTERNATIONAL HANDBOOK OF TELECOMMUNICATIONS ECONOMICS, vol. II, 199 (Gary Madden ed., 2003); Jerry A. Hausman, Valuing the Effect of Regulation on New Services in Telecommunications, in BROOKINGS PAPERS ON ECONOMIC ACTIVITY, MICROECONOMICS: 1997, 1 (Clifford Winston et al. eds., 1997); Jerry A. Hausman & J. Gregory Sidak, Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries, 1 J. COMPETITION L. & ECON. 173, 195 (2005); Jerry A. Hausman & J. Gregory Sidak, A Consumer-Welfare Approach to Mandatory Unbundling of Telecommunications Networks, 109 YALE L.J. 417, 462-63 (1999); Robert Pindyck, Mandatory Unbundling and Irreversible Investment in Telecom Networks, 6 REV. NETWORK ECON. 274, 274-75 (2007); William J. Baumol & J. Gregory Sidak, The Pig in the Python: Is Lumpy Capacity Investment Used and Useful?, 23 ENERGY L.J. 383, 390 (2002); J. Gregory Sidak & Daniel F. Spulber, DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES 403-26 (Cambridge Univ. Press 1997); Graeme Guthrie, Regulating Infrastructure: The Impact on Risk and Investment, 44 J. ECON. LIT. 925 (2006); David M. Mandy & William W. Sharkey, Dynamic Pricing and Investment from Static Proxy Models, 2 REV. NETWORK ECON. 403 (2003); and Jerry Hausman, Gregory Sidak and Timothy Tardiff, Are Regulators Forward-Looking? The Market Price of Copper versus the Regulated Price of Mandatory Access to Unbundled Local Loops in Telecommunications Networks, FEDERAL COMMUNICATIONS LAW JOURNAL, Vol. 60, 2008, (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1090612).

⁶ Attached, as Addendum 3, for convenience is an article that may prove useful in considering these concepts, Steve G. Parsons, *Cross-Subsidization in Telecommunications*, JOURNAL OF REGULATORY ECONOMICS, 2008.

the New Zealand Commerce Commission in setting the cost standards for interconnection costing (what they refer to as access costing). For reference, we have attached the document as Addendum 4. While we are not endorsing any finding or recommendation, we are recommending that the structure and basic approach be adopted. As such, it provides a “cookbook” approach to how the costs need to be developed. In fact, using this document, the Commission retained CostQuest to implement the model that adhered to these guidelines. The model was subsequently developed and used to help determine the official interconnection rate. In fact, the CostQuest model was reviewed by outside parties and was referred to as the “gold-standard” amongst these types of models. Much of the success can be attributed to the care with which the Commission used to address each component of the costing exercise.